

What is claimed is:

1. An autofocus system for a camera, comprising:

a contrast focus detector which detects a position of a focusing lens group, at which a contrast of an object image  
5 which passes through a photographing optical system reaches a maximum while moving said focusing lens group via a lens driver, said contrast focus detector defining said position of said focusing lens group at which said contrast of said object image reaches a maximum as a contrast in-focus position;  
10 a phase-difference focus detector which separates a light bundle of said object image into two light bundles so that said two light bundles are formed as two object images on a light-receiving element to detect a phase difference between said two object images formed thereon, said phase-difference  
15 focus detector defining a position of said focusing lens group at which an in-focus state is obtained for said object as a phase-difference in-focus position; and  
a controller for moving said focusing lens group via said lens driver to one of said phase-difference in-focus position  
20 and said contrast in-focus position, wherein said controller adjusts a moving range of said focusing lens group for detecting said contrast by said contrast focus detector in accordance with a degree of reliability of said phase-difference in-focus position.

2. The autofocus system according to claim 1, wherein said reliability corresponds to a minimum value of a correlation function of said two object images,

wherein said controller moves said focusing lens group to  
5 a start position away from said phase-difference in-focus position by a first moving amount in the case where said minimum value is smaller than a predetermined value, and by a second moving amount in the case where said minimum value is one of equal to and greater than said predetermined value, so as to  
10 detect said contrast while moving said focusing lens group from said start position in a direction toward said phase-difference in-focus position, the absolute value of said second moving amount being greater than the absolute value of said first moving amount.

15 3. The autofocus system according to claim 1, wherein said reliability corresponds to the inclination angles of two correlation lines between which a minimum value of a correlation function of said two object images is positioned,

wherein said controller moves said focusing lens group to  
20 a start position away from said phase-difference in-focus position by a first moving amount in the case where said sum is one of equal to and greater than a predetermined value, and by a second moving amount in the case where said minimum value is smaller than said predetermined value, to detect said  
25 contrast while moving said focusing lens group from said start

position in a direction toward said phase-difference in-focus position, the absolute value of said second moving amount being greater than the absolute value of said first moving amount.

4. The autofocus system according to claim 2, wherein a  
5 direction of movement of said focusing lens group by each of said first moving amount and said second moving amount is a direction toward infinity from said phase-difference in-focus position.

5. The autofocus system according to claim 2, wherein a  
10 direction of movement of said focusing lens group by each of said first moving amount and said second moving amount is a direction toward the minimum photographing distance position from said phase-difference in-focus position.

6. The autofocus system according to claim 1, wherein said  
15 phase-difference focus detector is provided as a unit which is independent of said contrast focus detector.

7. An autofocus system, comprising:  
a contrast focus detector which detects a position of a focusing lens group, at which a contrast of an object image  
20 which passes through a photographing optical system reaches a maximum while moving said focusing lens group via a lens driver, said contrast focus detector defining said position of said focusing lens group at which said contrast of said object image reaches a maximum as a contrast in-focus position;

a phase-difference focus detector which separates a light bundle of said object image into two light bundles so that said two light bundles are formed as two object images on a light-receiving element to detect a phase difference between  
5 said two object images formed thereon, said phase-difference focus detector defining a position of said focusing lens group at which an in-focus state is obtained for said object as a phase-difference in-focus position; and

a controller for moving said focusing lens group via said  
10 lens driver to one of said phase-difference in-focus position and said contrast in-focus position, wherein said controller adjusts a distance from a position of said focusing lens group to said phase-difference in-focus position, for detecting said contrast by said contrast focus detector in accordance with  
15 a degree of reliability of said phase-difference in-focus position.

8. An autofocus method, comprising: /

detecting a position of a focusing lens group, at which a contrast of an object image which passes through a  
20 photographing optical system reaches a maximum while moving said focusing lens group;

defining said position of said focusing lens group at which said contrast of said object image reaches a maximum as a contrast in-focus position;

separating a light bundle of said object image into two light bundles so that said two light bundles are formed as two object images on a light-receiving element to detect a phase difference between said two object images formed thereon;

5       defining a position of said focusing lens group at which an in-focus state is obtained for said object as a phase-difference in-focus position; and

commencing a lens driving operation, wherein a distance from said phase-difference in-focus position is controlled in  
10       accordance with a degree of reliability of said phase-difference in-focus position.